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Patrice Onno

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EXAMINER

ROSARIO, DENNIS

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

05/07/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

09/981,820

Applicant(s)

ONNO, PATRICE

Examiner

Dennis Rosario

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on RCE 4/17/07.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-20 and 22-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-7, 9, 11, 12, 14-20 and 22-41 is/are rejected.
- 7) ☒ Claim(s) 8, 10 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/27/06 10/19/01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/17/07 has been entered.

### ***Response to Amendment***

2. The amendment was entered on 4/17/07. Claims 1-3,5-20 and 22-41 are pending.

### ***Claim Objections***

3. Claim 19, line 9 objected to because of the following informalities:

“deciding side” ought to be amended to “decoding side”

Claim 10,last line: “substrate” ought to be amended to “subset”.

Appropriate correction is required.

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1 and 2 have been considered but are moot in view of the new ground(s) of rejection.

5. Applicant's arguments on page 20 with respect to claim 3 filed 4/17/07 have been fully considered but they are not persuasive and states:

**“...nothing in *Kolesnick* would teach...deciding, at the decoding side, to modify or not to modify the size of a located subset according to a determined number of low-frequency sub-band coefficients before restoring the located subset...”**

The examiner respectfully disagrees based on a new interpretation of Kolesnick regarding the rejection of claims 3 and 20, below.

6. Applicant's arguments on page 20 regarding claim 3 have been fully considered but they are not persuasive and states:

**“...Kolesnick does not teach...a decision to modify or not to modify the size of matrices at the decoding side.”**

The examiner respectfully disagrees for the same reasons as paragraph 5, above. In addition, fig. 13, the claimed decoding side, appears to receive a plurality of matrices of various sizes, as shown in fig. 10, numerals 1005, 1020, 1030, 1040, 1050, as represented in fig. 13, num. 1305 and the decision to modify a matrix or not, such as 1040, is performed in fig. 13, num. 1345 that determines if the plurality of matrices have been included, via fig. 13, num. 1340, as "PART" in fig. 13, num. 1340 of 1040. Note that the NO branch of 1345 leads to fig. 13, num. 1340 that adds more submatrices to the matrix of 1040 and the YES branch of 1345 means that matrix 1040 no longer needs modification and represents the matrix of fig. 10, num. 1005. Or in other words matrices of fig. 10, numerals 1020 and 1050 are stored, via fig. 13, num. 1340, as part of matrix 1040 of fig. 10 to create the matrix 1005 of fig. 10.

7. Applicant's arguments on page 21 with respect to claim 3 have been fully considered but they are not persuasive and states:

**"...nothing in Kolesnik would teach... 'taking into account at least one predetermined criterion representing a quality level for the restored subset of original samples of the digital signal,'..."**

The examiner respectfully disagrees based on a new interpretation of Kolesnick regarding the rejection of claims 3 and 20, below.

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8. In response to applicant's argument on page 22, lines 3, 4, 10, 14 that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "...coefficients from neighboring tiles, at the decoding side, are used to enhance the quality of the result."; "...a decision whether or not to modify or to expand the coefficients"; "...position of the tile and its size.") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

9. Applicant's arguments, see page 22, lines 15-20, with respect to line 19: "quality" have been fully considered and are persuasive. The rejection of claim 3 has been withdrawn in addition to the rejections of claims 6-9 and 13 under *Fukuhara*.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1,2,3,19 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Nister et al. (US Patent 6,775,412 B1).

Regarding claim 19, Nister discloses a device for processing a coded digital signal having a set of different types obtained by coding a set of original samples representing during physical quantities and a set of information representing original samples and parameters used the coding, comprising:

- a) means for determining a subset of samples (fig. 1, num. 109) corresponding to a selected part of the original digital signal using the set of information;
- b) means for obtaining a number of samples (fig. 1,num. 105) of at least one predetermined type and which are contained in the determined subset of samples; and
- c) at a deciding side, means for deciding whether or not to modify (fig. 1, num. 107) the determined subset of samples before restoring the selected part of the original signal, the decision being made according to the obtained number of samples of the at least one predetermined type and according to a required level of quality, and

d) means for restoring (fig. 2a,num. 203) the selected part of the original signal.

Regarding claim 1, Nister discloses a method of processing a coded digital signal including a set of samples of different types obtained by coding a set of original samples representing physical quantities, and including a set of information representing original samples and parameters used during the coding, said method including the steps of:

a) determining a subset of samples (fig. 3a-3e) corresponding to a selected part (via fig. 1,num. 109) of the original digital signal using the set of information;

b) obtaining a number of samples (via fig. 2b, num. 255 that is a function of number "n" that corresponds to a coefficient) of at least one predetermined type and which are contained in the determined subset of samples; and

c) deciding (via "he/she" in col. 7, line 25), at the decoding side, whether or not to modify the determined subset of samples ("change the form, size and location of the region of interest" in col. 7, lines 12,13) before restoring the selected part of the original signal (since the region of interest, roi, "can...be speci-fied...at any stage of the transmission" in col. 3, lines 29-31;thus, the roi can be specified or changed while in transit via line 105 of fig. 1), the decision being made, according to the obtained number of samples of the at least one predetermined type (as was previously determined in fig. 2b,num. 255 that corresponds to fig. 1,num. 101) and according to a required level of quality (since with respect to a user, "a better visual quality of this part of the image is therefore desired" in col. 1, lines 42,43 which corresponds to said user that desires to change said form, size and location of the region of interest. Note that a distinction



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appears to exist between Nister and the instant application since the instant application's modification appears to be automatic while Nister's modification is based on a user.).

Regarding claim 2, Nister discloses the method according to claim 1, which said determining, obtaining, and deciding steps are effected on reception of a request (as represented in fig. 1 as num. 105) to obtain the part of the coded digital signal.

Claims 3 and 20 are rejected the same as claim 1. Thus, argument similar to that presented above for claim 1 is equally applicable to claims 3 and 20.

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12. Claims 3,5-7,9,11,12,14-18,20,22-32 and 34-41 are rejected under 35 U.S.C. 102(e) as being anticipated by Kolesnik et al. (US Patent 6,249,614 B1).

Regarding claims 3 and 20, Kolesnik et al. discloses a method of processing a coded digital signal including a set of samples obtained by coding a set of original samples representing physical quantities using a multiresolution coding format, and including a set of information relating to a size  $w, h$ , of the set of original samples and its resolution  $res$ , comprising the steps of:

a) means for (fig. 8, num. 830) locating a subset of original samples (or "locate...sub-matrices" in col. 9, lines 41,42 as shown in figure 4 labels QUANTIZED SUBMATRIX, ZERO SUBMATRIX (shown two times)) given:

a1) size  $zulx, zuly, zh, zw$  (as shown by the size of the image of fig. 2A)

and

a2) resolution  $zres$  (as shown by the size of the image of fig. 2A) in the set of original samples (fig. 2A)

b) according to:

b1) the set of information on relating to the size  $w, h$  (as shown by the size of the image of fig. 2A) and

b2) the resolution  $res$  of this set (as shown by the size of the image of fig. 2A);

c) means for (fig. 9, num. 920) determining, amongst coefficients of a low-frequency sub-band  $LL_0$  of a last decomposition level obtained by decomposition into frequency sub-bands of the set of original samples (as done in figures 2A thru 2D),

c1) a number of coefficients (or “number of...coefficients” in col. 11, lines 12,13) per dimension (via “height or width” in col. 12, line 17) of the signal which correspond to the located subset; and

d) means for (fig. 13,num. 1310) deciding, at the decoding side (as represented in fig. 13), to modify or not to modify the size of the located subset (as determined in a NO branch of fig. 13, num. 1345 that ultimately leads to numeral 1340 that adds more submatrices to build a quantized coefficient matrix) according to the determined number of low-frequency sub-band coefficients (as determined in fig. 9, num. 920), said means for deciding taking into account at least one predetermined criterion representing a quality level (or a “quantization technique” in col. 14, line 12 that includes a “criteria... [of]... quality required” in col. 7, line 6; thus, 1310 is aware of a certain quantization technique that represents a required quality) for the restored subset of original samples of the digital signal; and

e) means for restoring (fig. 9,num. 150) the located subset, said means for deciding being adapted to make a decision with regard to a modification of the size of the located subset before said means for restoring restore the located subset.

Regarding claim 5, Kolesnik et al. discloses a method according to claim 3, in which said decision step includes taking into account at least one predetermined criterion representing a compromise between a required quality level (or the amount of processing as shown in the horizontal axis of fig. 3A) for the restoration of the subset of original samples and a speed (or time as shown in the vertical axis of fig. 3A) of processing for restoring the subset of original samples.

Claims 6 and 9 are rejected the same as claim 3, step d. Thus, argument similar to that presented above for claim 3, step d is equally applicable to claims 6 and 9.

Regarding claim 7, Kolesnik et al. discloses the method according to claim 6, in which the modification lies in an increase in the size (by "collect[ing]" in col. 14, line 44 other "sub-matrices" in col. 14, line 44 as shown in fig. 4 that shows a plurality of sub-matrices that can be collect to form a quantized coefficient matrix.) of the located subset of original samples.

Regarding claim 11, Kolesnik et al. discloses the method according to claim 3, in which said decision step results in a preservation of the size the size of the located subset of original samples (figure 10,num. 1030 determines a size of the sub-matrix as done in fig. 9,num. 920 for later processing in fig. 9, num. 930).

Regarding claim 12, Kolesnik et al. discloses the method according to claim 3, further comprising:

a) the step of increasing the size of the located subset of original samples (by "collect[ing]" in col. 14, line 44 other "sub-matrices" in col. 14, line 44 as shown in fig. 4 that shows a plurality of sub-matrices that can be collect to form a quantized coefficient matrix.) which does not change the number of coefficients of the low-frequency sub-band corresponding to the subset (since the collecting operation corresponds "ALL COEFFICIENT MATRICES COLLECTED" in fig. 13, num. 1365; thus all of the determined number of coefficients are collected).

Claim 14 is rejected the same as claim 3. Thus, argument similar to that presented above for claim 3 is equally applicable to claim 14 except for the additional limitation as disclosed in Kolesnik et al. of:

a) the set of original samples of the digital signal is separated into several zones (as shown in fig. 4, labels: ZERO SUBMATRIX (shown twice) and a QUANTIZED SUBMATRIX).

Regarding claim 15, Kolesnik et al. discloses the method according to claim 3, in which the coded digital signal includes blocks of samples (as shown in the middle 4 blocks labeled: EXEMPLARY QUANTIZED COEFFICIENT MATRICES of fig. 4) which have been coded independently (as shown in the bottom four block of fig. 4, labeled: EXEMPLARY CODED QUANTIZED COEFFICIENT MATRICES where each matrices is coded as either a SPARSE MATRIX or ZERO MATRIX or DENSE MATRIX).

Claim 16 is rejected the same as claim 3. Thus, argument similar to that presented above for claim 3 is equally applicable to claim 16 except for the additional limitation as disclosed in Kolesnik et al. of said decoding method comprises the steps of:

- a) extracting the samples from the coded digital signal (fig. 13, num. 1305) corresponding to the located subset of the original samples having a size which has possibly been modified;
- b) entropic decoding (fig. 13, num. 1325) of these samples;
- c) dequantization (fig. 13, num. 1355) of the previously decoded samples;
- d) reverse transformation (fig. 13, num. 1365) of the decomposition into frequency sub-bands on the previously dequantized samples; and
- e) restoration (fig. 13, num. 1370) of the located subset of samples.

Claim 17 is rejected the same as claim 16, step a. Thus, argument similar to that presented above for claim 16, step a is equally applicable to claim 17.

Regarding claim 18, Kolesnik et al. discloses the method according to claim 16, in which the digital signal is an image signal, the samples of the image being arranged to constitute the rows and columns (via a matrix array as shown in fig. 2C that shows columns (HH,HL), (LH,LL) and rows (HH, LH), (HL,LL)) of the image.

Claims 22-29 are rejected the same as claims 5-15, respectively. Thus, argument similar to that presented above for claims 5-15 is equally applicable to claims 22-29, respectively.

Claims 30 is rejected the same as claims 3 and 16. Thus, argument similar to that presented above for claims 3 and 16 is equally applicable to claim 30.

Claims 31 and 32 are rejected the same as claims 17 and 18. Thus, argument similar to that presented above for claims 17 and 18 is equally applicable to claims 31 and 32, respectively.

Regarding claim 34, Kolesnik et al. discloses the device according to claim 20, wherein said means for locating, said means for determining, and said means for deciding are incorporated in:

- a) a microprocessor (fig. 14, num. 1405),
- b) a read only memory containing a program for processing the coded digital signal (fig. 14,num. 1410), and
- c) a random access memory (fig. 14, num. 1450) containing registers adapted to record variables modified during the execution of said program.

Claims 35-41 are rejected the same as claim 34. Thus, argument similar to that presented above for claim 34 is equally applicable to claims 35-41.

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nister et al. (US Patent 6,775,412 B1) in view of Lynch et al. (US Patent 6,381,280 B1).

Regarding claim 33, Nister does not disclose claim 33, but teaches that a "program" in col. 7, line 21 can be used. Thus, Nister suggests to one of ordinary skill in the art of programs to use a system to execute the program.

Lynch teaches such a system to execute programs as shown in fig. 12 and the remaining limitations of claim 19 of

- a) a microprocessor (fig. 12,num. 902),
- b) a read only memory (fig. 12,num. 906) containing a program for processing the coded digital signal, and
- c) a random access memory (fig. 12,num. 908) containing registers adapted to record variables modified during the execution of said program.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Nister's program with Lynch's system, because Lynch's system is "well known" in col. 14, line 31.



***Allowable Subject Matter***

15. Claims 8,10,13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 8 and 13 are allowable because the prior art, Fukuhara et al. (US Patent 6,658,158), does not teach claim 8 within the environment of claim 3.

Claim 10 is allowable for the same reasons as the office action of 10/17/06.

The benefit of claims 8 and 13 improves the quality of restoration as mentioned on page 7 of the specification.

The benefit of claim 10 leads to preservation of an image as mentioned on page 7 of the specification.

***Conclusion***

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Rosario whose telephone number is (571) 272-7397. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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